

Amendments to the Claims

This listing of claims will replace all prior listings of claims in the application.

Listing of Claims

✓ 1. (Canceled)

✓ 2. (Canceled)

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Cont. 3. (Previously Presented) The operating unit according to Claim 11, further comprising reference value setting means provided in the vehicle by which said reference value corresponding to said target traveling speed is set, and wherein the automatic braking device is operated according to the reference value set by the reference value setting means based on the control signal.

4. (Previously Presented) The operating unit according to Claim 11, further comprising travelling speed detection means provided in the vehicle for detecting said actual traveling speed of the vehicle based on the control signal and outputting an output signal so as to operate the automatic braking device until the output signal reaches a value corresponding to the target traveling speed of the vehicle.

5. (Previously Presented) The operating unit according to Claim 11, wherein said detection means comprises temperature detection means for detecting that an atmospheric temperature reaches a given temperature indicating said danger state and outputting said detection signal.

6. (Canceled)

7. (Canceled)

8. (Previously Presented) The operating unit according to Claim 12, wherein said detection means comprises at least one temperature detection means for detecting that an atmospheric temperature reaches a given temperature indicating said danger state and outputting said detection signal.

9. (Previously Presented) The operating unit according to Claim 8, wherein the temperature detection means is provided in a vehicle tunnel.

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10. (Previously Presented) The operating unit according to Claim 9, wherein the transmitter is provided at one of a position of an opening portion serving as an approach to the tunnel and a position remote from the opening portion by a given distance.

Cont.  
11. (Previously Presented) In an operating unit for a vehicle traveling on a road which said vehicle has an automatic braking device that includes a manual actuator where braking is produced in wheel brakes by operation of said manual actuator by a vehicle operator, said operating unit comprising:

at least one detection means provided adjacent to the road for detecting a danger state and outputting a detection signal based on detection of said danger state;

a transmitter provided adjacent to the road which receives said detection signal and transmits a transmitter signal formed of an electromagnetic wave based on the detection signal;

a receiver provided on said vehicle which receives said transmitter signal and outputs a control signal based on reception of the transmitter signal outputted by the transmitter;

said automatic braking device receiving said control signal and operating an antilock control device of said

vehicle, said automatic braking device being operated based on receipt of the control signal in order to operate an automatic brake wherein a braking fluid is obtained by driving a pump of said automatic braking device to supply said braking fluid to wheel brakes provided in at least a pair of right and left wheels to produce a braking force, so that said antilock control device is operable during the operation of the automatic braking device; and

E/ a reference value corresponding to a target traveling speed being set inside the vehicle based on said control signal wherein when an actual traveling speed of the vehicle exceeds said target traveling speed for the vehicle after the control signal is received, the automatic braking device operates with reference to said reference value to automatically reduce the actual traveling speed to the target traveling speed by the operation of the automatic braking device.

Cont. 12. (Previously Presented) In a vehicle operating unit for a vehicle traveling on a road which said vehicle has an automatic braking device that includes a manual actuator where braking is produced in wheel brakes by operation of said manual actuator by a vehicle operator, said operating unit comprising:

at least one detection means provided adjacent to the road for detecting a danger state and outputting a detection signal based on detection of said danger state;

a transmitter provided adjacent to the road which receives said detection signal and transmits a transmitter signal formed of an electromagnetic wave based on the detection signal;

a receiver provided on said vehicle which receives said transmitter signal and outputs a control signal based on reception of the transmitter signal outputted by the transmitter;

said automatic braking device receiving said control signal and operating an antilock control device of said vehicle, said automatic braking device being operated based on receipt of the control signal in order to operate an automatic brake wherein a braking fluid is obtained by driving a pump of said automatic braking device to supply said braking fluid to wheel brakes provided in at least a pair of right and left wheels to produce a braking force;

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a reference value corresponding to a target traveling speed being set inside the vehicle based on said control signal wherein when an actual traveling speed of the vehicle exceeds said target traveling speed for the vehicle after the control signal is received, the automatic braking device operates with reference to said reference value to automatically reduce the actual traveling speed to the target traveling speed by the operation of the automatic braking device; and

an alarm unit being provided which generates an alarm to the inside of the vehicle based on the control signal outputted by the receiver based upon receipt of said transmitter signal transmitted from said transmitter.

13. (Previously Presented) In a vehicle adapted to travel on a road, said vehicle comprising a brake system including an automatic braking device and individual wheel brakes which are provided in wheels of the vehicle, said vehicle including a manual actuator within a compartment of the vehicle which is connected to said brake system and is operable by an operator of the vehicle to effect manual operation of the brake system, the improvement comprising an operating unit for said vehicle to automatically reduce an actual traveling speed of said vehicle during emergency conditions, said operating unit comprising at least one detection means provided adjacent to a road for detecting a danger state within said road, said detection means outputting a detection signal based on detection of said danger state, a

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transmitter provided on said road which receives said detection signal and transmits a transmitter signal along said road to vehicles traveling thereon, a receiver being provided within said vehicle which receives said transmitter signal and outputs a control signal based on reception of said transmitter signal, an automatic braking device being provided on said vehicle to effect actuation of said wheel brakes independent of said manual actuator within said vehicle, said automatic braking device being connected to said receiver to receive said control signal and based on receipt of said control signal to effect actuation of at least one of said wheel brakes to produce a braking force in said wheels depending upon the presence of said danger state, said automatic braking device including a target speed setting device in which is set a target traveling speed for said vehicle such that actuation of said automatic braking device based on receipt of said control signal produces said braking force which reduces said actual traveling speed to said target traveling speed automatically based on receipt of said control signal and independently of said manual actuator.

14. (Previously Presented) The operating unit according to Claim 13, wherein said target speed setting device permits setting of a reference value which corresponds to said target traveling speed, said automatic braking device being operated according to said reference value to reduce said actual traveling speed to said target traveling speed.

15. (Previously Presented) The operating unit according to Claim 14, further comprising traveling speed detection means provided in said vehicle which detect said actual traveling speed of said vehicle and output an output signal to said automatic braking device to permit reduction of said actual traveling speed to said target traveling speed.

16. (Previously Presented) An operating unit for a vehicle traveling on a road, which said vehicle has an automatic braking device that includes a manual actuator where braking is produced in wheel brakes by operation of said manual actuator by a vehicle operator, said operating unit comprising:

at least one detection means provided adjacent to the road for detecting a danger state and outputting a detection signal based upon detection of said danger state;

a transmitter provided adjacent to the road which receives said detection signal and transmits a transmitter signal formed of an electromagnetic wave based on said detection signal;

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a receiver provided within said vehicle which receives said transmitter signal and outputs a control signal based upon reception of said transmitter signal outputted by said transmitter;

said automatic braking device being operated based on receipt of the control signal in order to operate an automatic brake which produces a braking force in at least one wheel brake within a plurality of wheel brakes provided in a plurality of wheels;

a reference value corresponding to a target traveling speed being set inside the vehicle based on said control signal wherein when an actual traveling speed of the vehicle exceeds said target traveling speed for the vehicle after the control signal is received, said automatic braking device operates with reference to said reference value to automatically reduce said actual traveling speed to said target traveling speed by operation of said automatic braking device; and

when said actual traveling speed of the vehicle is less than said target traveling speed after said control signal is received, said automatic braking device does not operate.

17. (Previously Presented) The operating unit according to Claim 16, wherein said transmitter signal is provided at one of a position of an opening portion serving as an approach to the tunnel and a position remote from the opening portion by a given distance.

18. (Previously Presented) The operating unit according to Claim 16, wherein said transmitter signal indicates the presence of the danger state and said automatic braking device automatically reduces said actual traveling speed based on the presence of the danger state.

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19. (Previously Presented) A vehicle operating unit for a vehicle traveling on a road which said vehicle has an automatic braking device that includes a manual actuator where braking is produced in wheel brakes by operation of said manual actuator by a vehicle operator, said operating unit comprising:

at least one detection means provided adjacent to the road for detecting a danger state and outputting a detection signal based upon detection of said danger state;

one or more transmitters provided adjacent to the road which receive said detection signal and transmit a transmitter signal formed of an electromagnetic wave based on the detection signal;

a receiver provided within the vehicle which receives said transmitter signal from at least one of said transmitters and outputs a control signal based upon reception of said transmitter signal outputted by said transmitter;

said automatic braking device receiving said control signal and being operable based on receipt of said control signal outputted by said receiver in order to operate an automatic brake which produces a breaking force in at least one wheel brake within a plurality of wheel brakes provided in a plurality of wheels;

a reference value corresponding to a target traveling speed being set inside the vehicle based on said control signal wherein when an actual traveling speed of the vehicle exceeds a target traveling speed for the vehicle after said control signal is received, said automatic braking device operates with reference to said reference value to automatically reduce said actual traveling speed to said target traveling speed by operation of the automatic braking device, and when said actual traveling speed of the vehicle is less than said target traveling speed after said control signal is received, said automatic braking device does not operate; and

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a sound unit being provided which can generate a sound to an interior of the vehicle based on receipt of said control signal outputted by said receiver, which said control signal is based upon receipt of said transmitter signal transmitted from at least one of said transmitters.

20. (Previously Presented) The operating unit according to Claim 19, wherein the transmitter is provided at one of a position of an opening portion serving as an approach to the tunnel and a position remote from the opening portion by a given distance.

21. (Previously Presented) The operating unit according to Claim 19, wherein said transmitter signal indicates the presence of the danger state and said automatic braking device automatically reduces said actual traveling speed based on the presence of the danger state.

22. (Previously Presented) An operating unit for a vehicle traveling on a road, which said vehicle has an automatic braking device, said operating unit comprising:

a receiver provided within said vehicle which receives a transmitter signal outputted by a transmitter and outputs a control signal based upon reception of the transmitter signal;



said automatic braking device being operated based on receipt of the control signal in order to operate an automatic brake which produces a braking force in at least one wheel brake within a plurality of wheel brakes provided in a plurality of wheels; and

wherein a reference value corresponding to a target traveling speed is set inside the vehicle based on said control signal, and wherein an actual traveling speed of the vehicle exceeds a target traveling speed for vehicle after the control signal is received, the automatic braking device operates with reference to said reference value to automatically reduce the actual traveling speed to the target traveling speed by the operation of the automatic braking device; and

when said actual traveling speed of the vehicle is less than the target traveling speed for the vehicle after the control signal is received, the automatic braking device does not operate.

23. (Previously Presented) The operating unit according to Claim 22, wherein the transmitter is provided at one of a position of an opening portion serving as an approach to the tunnel and a position remote from the opening portion by a given distance.

24. (Previously Presented) The operating unit according to Claim 22, wherein said transmitter signal indicates the presence of a danger state adjacent the roadway and said automatic braking device automatically reduces said actual traveling speed based on the presence of the danger state.

25. (New) In an operating unit for a vehicle traveling on a road, said vehicle having wheel brakes for wheels thereof and an automatic braking device that includes a manual actuator such that said vehicle is driven on said road under the manual control of an operator during non-emergency

conditions and braking is produced in said wheel brakes by operation of said manual actuator by said operator, said automatic braking device being further adapted to automatically brake said wheel brakes to avoid a danger state before said danger state is physically detected by said operator without requiring braking through said manual control of said operator, said operating unit comprising:

at least one detection means provided adjacent to the road at a predefined location for detecting a danger state in the road and outputting a detection signal based on detection of said danger state;

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a transmitter which receives said detection signal and transmits a transmitter signal formed of an electromagnetic wave based on the detection signal which indicates the presence of said danger state;

a receiver provided on said vehicle which receives said transmitter signal and outputs a control signal based on reception of the transmitter signal outputted by the transmitter;

said automatic braking device receiving said control signal and operating an antilock control device of said vehicle to brake said vehicle in response to the presence of said danger state, said automatic braking device being operated as a result of receipt of the control signal in order to operate an automatic brake wherein a braking fluid is supplied to said wheel brakes by driving a pump of said automatic braking device and said wheel brakes are provided in at least a pair of right and left wheels of said wheels to produce a braking force such that said antilock control device is operable during the operation of the automatic braking device; and

a reference value corresponding to a target traveling speed being stored inside the vehicle wherein said target traveling speed allows said vehicle to avoid said danger state and wherein when an actual traveling speed of the vehicle exceeds said target traveling speed for the vehicle after the

control signal is received, the automatic braking device operates with reference to said reference value to automatically reduce the actual traveling speed to the target traveling speed without requiring braking by said operator or receipt of additional transmitter signals.

26. (New) In a vehicle adapted to travel on a road, said vehicle comprising a brake system including an automatic braking device and individual wheel brakes which are provided in wheels of the vehicle, said vehicle including a manual actuator within a passenger compartment of the vehicle which is connected to said brake system, said manual actuator being operable by a vehicle operator in said compartment to effect manual operation of the brake system while driving in a roadway wherein said vehicle is driven manually during non-emergency conditions under the control of the operator, the improvement comprising an operating unit for said vehicle to automatically reduce an actual traveling speed of said vehicle during emergency conditions, said operating unit comprising at least one detection means provided adjacent to a road at a predefined location for detecting a danger state within said road before said operator detects said danger state, said detection means outputting a detection signal based on detection of said danger state, a transmitter provided on said road which receives said detection signal and transmits a transmitter signal along said road for vehicles traveling thereon, a receiver being provided within said vehicle which receives said transmitter signal and outputs a control signal based on and after reception of said transmitter signal, an automatic braking device being provided on said vehicle to effect actuation of said wheel brakes independent of said manual actuator within said vehicle, said automatic braking device being connected to said receiver to receive said control signal and as a result of receipt of said control signal, to initiate and continue actuation of at least one of said wheel brakes without requiring actuation of said manual

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could. actuator or receipt of additional transmitter signals to produce a braking force in said wheels depending upon the presence of said danger state, said automatic braking device including a target speed setting device in which is stored a target traveling speed for said vehicle to which said vehicle will be braked to avoid said danger state, wherein said automatic braking device continues to actuate said wheel brakes based on receipt of said control signal to automatically produce said braking force until said actual traveling speed is reduced to said target traveling speed.

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